

**South Mississippi Electric Power Association**

**Hattiesburg, Mississippi**

**ENVIRONMENTAL ASSESSMENT  
(EA)**

**Southeast Greene 230:161:69 kV Substation, Microwave  
Tower, 230 kV and 69 kV Transmission Lines**

**October 2006**

*Prepared by*

**South Mississippi Electric Power Association  
Environmental Affairs**

October 4, 2006

Ms. Stephanie Strength  
Rural Utilities Services  
Room 2244  
1400 Independence Ave. SW  
Washington, D.C. 20250

Re: Environmental Assessment for Proposed 230:161:69 kV Substation, 230  
kV and 69 kV Transmission Lines in Greene County, Mississippi  
**WORK PLAN: Construction Work Plan January 1, 2003 to  
December 31, 2007**

Dear Ms. Strength:

Enclosed are (2) copies of a Environmental Assessment (EA), without  
scoping, covering a proposed 230:161:69 kV substation, two proposed 230 kV  
transmission lines, and one proposed 69 kV transmission line to serve Singing  
River EPA's existing load in Greene County, Mississippi.

This report is being submitted for your review and evaluation as a part of  
the requirements in our loan application to complete this project. If any additional  
information is required, please advise.

Best Regards,

Joseph A. Ward  
Director of Environmental Affairs & Fuels

Enclosures

cc: Mr. James Compton – SMEPA

## **Environmental Assessment**

### **Southeast Greene 230:161:69 kV Substation, 230 kV and 69 kV Transmission Lines**

#### **EXECUTIVE SUMMARY**

##### **PROJECT DESCRIPTION**

The proposed project will consist of one (1) 5.76 acre 230:161:69 kV substation, two (2) one-tenth (0.1) mile 230 kV transmission lines, one (1) four-tenths (0.4) mile 69 kV transmission line, and one microwave tower. The transmission lines and microwave tower will occupy the remainder of the approximate fourteen (14) acre site. The site is located approximately nine and one half (9.5) miles south of Leakesville, Mississippi. The total project cost is expected to be approximately \$5,735,000. The transmission line construction will be contained within the boundaries of the proposed site. No new right-of-way will be required aside from that contained in the proposed project site.

##### **NEED FOR PROJECT**

The purpose of this project is to improve reliability and quality of power in the Greene County area, specifically the Southeast Greene County area. This will enable SMEPA to maintain adequate voltage levels and meet the increasing power demand on its transmission system so that it may be able to render an adequate and reliable supply of energy to all of its member systems. SMEPA's Board of Directors has concurred with the need and has approved the construction of the necessary facilities to serve this load.

## **EXECUTIVE SUMMARY**

### **ENVIRONMENTAL IMPACT OF PROPOSED ACTION**

The project will require a total of approximately fourteen (14) acres of land in Greene County for the substation, transmission lines, and microwave tower. This land will be unavailable for other uses for the life of the project. All of the acreage required for the project is upland oak and pine forest that has recently been clear cut.

The project is anticipated to have minimal, if any, impact on cultural resources, wetlands, threatened or endangered species habitat or other areas of special or unique environmental significance.

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- A. SMEPA Notice to Boards of Supervisors of Greene County, Southern Mississippi Planning & Development District, and State Clearinghouse for Federal Programs
- B. Response from State Clearinghouse for Federal Programs
- C. Response from U. S. Fish & Wildlife Service
- D. Response from Department of the Army, Corps of Engineers
- E. Response from Mississippi Department of Archives & History
- F. Response from Natural Resources Conservation Service.
- G. Policy No. 302 – Environment
- H. LandView 6 Census 2000 Population Estimator
- I. Response from Federal Aviation Administration
- J. Response from Federal Communications Commission
- K. Response from Mississippi Public Service Commission

## **1.0 INTRODUCTION**

The purpose of this environmental assessment (EA) is to evaluate the potential environmental impacts which may arise as a result of the Rural Utilities Service's (RUS), an agency which administers the U. S. Department of Agriculture's Rural Development Utilities Programs, federal action related to the construction by South Mississippi Electric Power Association (SMEPA) of a 230:161:69 kV substation of approximately 5.76 acres, two (2) one-tenth (0.1) mile 230 kV transmission lines, one (1) four-tenths (0.4) mile 69 kV transmission line, and a microwave tower (including a total of 14 acres). This proposed action is located in Greene County, Mississippi.

SMEPA, headquartered in Hattiesburg, Mississippi, is a non-profit electric generation and transmission cooperative organized for the purpose of providing power to most of southern Mississippi. SMEPA provides service to eleven (11) member distribution cooperatives that are served by three power supply arrangements in three different areas. These include the SMEPA control area (the On-System Area), the Off-System Area, and the Mississippi Power Company (MPCO) Area. The distribution cooperatives consist of Coahoma, Coast, Delta, Dixie, Magnolia, Pearl River Valley, Singing River, Southern Pine, Southwest Mississippi, Twin County, and Yazoo Valley Electric Power Associations (EPA).

The On-System Area includes most of the service areas of Dixie, Pearl River Valley, and Southern Pine EPAs, as well as a portion of Singing River EPA. The Off-System Area includes the loads of the Yazoo Valley, Coahoma, Delta,



Twin County, Southwest Mississippi, and Magnolia EPAs along with a portion of the Southern Pine EPA. Coast EPA, most of Singing River EPA, and small portions of Dixie, Pearl River Valley, and southern Pine EPAs are located in the MPCO Area.

This EA has been prepared in compliance with RUS Environmental Policies and Procedures, 7 CFR Part 1794, and the Council on Environmental Quality Regulations, 40 CFR Parts 1500-1508, for implementation of the National Environmental Policy Act.

## **2.0 PROPOSED ACTION & FEDERAL DECISION TO BE MADE**

SMEPA has requested financing assistance from RUS for the proposed construction of an electric substation, transmission lines, and related facilities in Greene County, Mississippi. The proposed federal action related to SMEPA's proposed electric project would be RUS's granting of financing assistance for the construction of the proposed facilities. RUS's decision is to be made based on the environmental analysis outlined in this EA and would consist of deciding whether to implement the proposed action by granting financing assistance for the construction of the proposed electric facilities.

## **3.0 PROJECT DESCRIPTION**

The proposed action will occupy an approximate fourteen (14) acre site located approximately nine and one half (9.5) miles south of Leakesville, Mississippi. The total project cost is expected to be approximately \$5,735,000.

### **3.1 SOUTHEAST GREENE COUNTY SUBSTATION – 5.76 acres**

The proposed Southeast Greene County Substation would be a 230:161:69 kV substation with one (1) three-phase 150 MVA 230:161 kV transformer, two (2) three-phase 50 MVA 161:69 kV transformers, two (2) 230 kV gas circuit breakers, three (3) 161 kV gas circuit breakers, and six (6) 69 kV gas circuit breakers. This proposed substation will be located at a point on South Mississippi Electric Power Association's existing 230 kV transmission line and 69 kV transmission line in the Southwest 1/4 of the Northwest 1/4 of Section 29, Township 1 North, Range 5 West, Greene County, Mississippi. The substation will have a 230 kV 3-element ring bus, a 161 kV 3-element ring bus and a 69 kV main and transfer bus with main, transfer, bus tie, and feeder breakers. The substation will be designed for expansion of the 230 kV, 161 kV, and 69 kV buses as future requirements dictate. A seven foot high chain link fence fabric with three strands of barbed wire for a total height of 8' will be used for fencing. The surface of the substation will have 4" of crushed limestone that consists of a 2" base layer of #4 limestone with another 2" of #57 limestone. The substation will also have a 400-foot guyed microwave tower for communications. The estimated cost of constructing the proposed new substation would be \$5,285,000.

### **3.2 TRANSMISSION LINES**

All of the proposed transmission line relocations will be relocated within the 14 acre project site.

**3.2.1** The proposed SMEPA Southeast Greene 230 kV transmission line re-route (Southeast Greene – AEC Macintosh) consists of the relocation of approximately one-tenth (0.1) mile of single circuit 230 kV transmission line. The existing SMEPA 230 kV transmission line will be relocated to serve the SMEPA 230:161:69 kV Southeast Greene Substation described above. The relocated transmission line will commence from a point on SMEPA's existing 230 kV transmission line near Structure Number 143 in the Southwest 1/4 of the Northwest 1/4 of Section 29, Township 1 North, Range 5 West, Greene County, Mississippi and run generally Westerly approximately 0.1 mile to the proposed SMEPA Southeast Greene 230:161:69 kV substation in the same Section, Township, and Range. Said facilities are to be constructed of three (3) 1351.5 kcmil ACSR conductors per circuit with two (2) 3/8-inch high strength steel ground wires, and will utilize wood, concrete, or steel pole construction on a right-of-way one hundred and twenty-five (125) feet in width. SMEPA will have the right to remove all danger trees on lands adjacent to the one hundred twenty-five (125) foot wide right-of-way, any part of which would in falling strike any component of the line. The estimated cost of construction of this proposed new transmission line would be \$150,000.

**3.2.2** The proposed SMEPA Southeast Greene 230 kV transmission line re-route (Southeast Greene – Benndale) would consist of the relocation of approximately one-tenth (0.1) mile of single circuit 230 kV transmission line. The existing transmission line will be relocated to serve the SMEPA 230:161:69 kV Southeast Greene Substation described above. The relocated transmission line will commence from a point on SMEPA's existing 230 kV transmission line near Structure Number 142 in the Southwest 1/4 of the Northwest 1/4 of Section 29, Township 1 North, Range 5 West, Greene County, Mississippi and run generally Northerly approximately 0.1 mile to the proposed SMEPA Southeast Greene 230:161:69 kV substation. Said facilities are to be constructed of three (3) 1351.5 kcmil ACSR conductors per circuit with two (2) 3/8-inch high strength steel ground wires, utilizing wood, concrete, or steel pole construction on a right-of-way one hundred and twenty-five (125) feet in width. Again, SMEPA would have the right to remove all danger trees on lands adjacent to said one hundred and twenty-five (125) foot wide right-of-way which would in falling any component of the line. The estimated cost of constructing the proposed new transmission line would be \$150,000.

**3.2.3** The proposed SMEPA Southeast Greene Road 69 kV transmission line re-routes (Southeast Greene - Leakesville and Southeast Greene Road – Sawmill Road) would consist of approximately four-tenths (0.4) mile of single circuit 69 kV transmission line relocation. The existing transmission lines will be relocated and connected to the SMEPA 230:161:69 kV Southeast Greene Substation described above. Each of the two (2) relocated transmission lines will

commence from a point on SMEPA's existing 69 kV transmission line near Structure Number 100 in the Southwest 1/4 of the Northwest 1/4 of Section 29, Township 1 North, Range 5 West, Greene County, Mississippi and run generally Easterly approximately 0.2 mile to the proposed SMEPA Southeast Greene 230:161:69 kV substation. These 69 kV line are to be constructed of three (3) 795.0 kcmil ACSR conductors per circuit with one (1) 3/8-inch high strength steel ground wire, utilizing wood, concrete, or steel pole construction on a right-of-way one hundred (100) feet in width. The estimated cost of construction these proposed new transmission lines would \$150,000.

### **3.3 PROJECT LOCATION**

The proposed project area is located in the southeastern portion of Greene County, Mississippi, approximately nine and one half (9.5) miles south of Leakesville, Mississippi (See County Map for general project location). For substation shape, size, and layout, please refer to the Site Map. Specifically, the proposed action is located in the Southwest 1/4 of the Northwest 1/4 of Section 29, Township 1 North, Range 5 West, Greene County, Mississippi.

### **3.4 CONSTRUCTION, CLEARING, and MAINTANANCE METHODS**

In general, once the environmental requirements are satisfied, and prior to clearing, SMEPA may provide the landowner with an opportunity to remove merchantable timber. Because the area of the proposed project has recently been clear cut, this practice is not applicable to the extent that it normally would

for projects requiring the clearing of a typical wooded area. In the areas where the prior timber harvests have not cleared the site as necessary for construction, the standard clearing practices will be followed. Clearing is normally accomplished on a contract basis under the general direction of a company inspector. In preparing the site, trees shall be removed, underbrush cleared, and tree stumps shall be cleared from the ground up to a height of no more than four (4) inches. The contractor shall not trim or remove shade, fruit, or ornamental trees unless so directed by the property owner.

All trees and brush within the limits of the site shall be cut by hand operated power saws, manual cut, shear cut, or bush hogged. Any brush or tree shear must be sheared in such a manner that the trunk is completely sheared. Mechanical equipment may be used to move or spread brush and trees for and after lopping. Regardless of the clearing method used, the roots must be left in place and the soil must be left in such condition as to not cause erosion. All trees cut shall have all branches removed from the trunk. All brush, branches, etc. shall, without delay, be disposed of by lopping and scattering over the outer edges of the site. Trees and brush shall not be left in ditches or streams. Debris from clearing will not be left on any fences or on wood roads or trails.

Natural revegetation is allowed to occur after clearing. This type of clearing process minimizes both cost and permanent impact on the transmission line right-of-way. This practice provides acceptable and adequate results for most soils within SMEPA's service area.

The holes for setting the bases of the transmission line support structures would be mechanically augured, and the poles will be placed using a digger/derrick truck. The diameter of the augured holes range from two to four feet in width, and the holes are backfilled with a dense grade material. The earth taken from the holes would be disposed of in upland areas or spread around the structure avoiding placing fill in any wetland or floodplain areas. The electrical conductor would be strung using a pulley system along with a truck mounted conductor spool and tensioner. Appropriate soil erosion and sediment control procedures, such as seeding, mulching, terracing, stacking straw bales and constructing silt fences, would be implemented during and after the construction of the proposed project in areas of denuded vegetation.

Maintenance, once construction is complete, will consist of ground inspections conducted by an inspector walking the site as needed. Vegetation will be controlled on site using acceptable and proven means (generally bush hogging).

#### **4.0 PUBLIC INVOLVEMENT**

The EA will be placed on public notice consistent with the requirements in 7 CFR 1794 and associated guidance documents from RUS. If public comment or involvement then occurs, each concern will be addressed consistent with 7 CFR 1794 and/or associated guidance from RUS.

## **5.0 NEED FOR THE PROPOSED ACTION**

The purpose of this proposed action is to improve reliability and quality of power in the Greene County area, specifically in the Southeast Greene County area. The proposed action, in part, will enable SMEPA to maintain adequate voltage levels and meet the increasing power demand on its transmission system. By constructing the project, SMEPA will be better able to render an adequate and reliable supply of energy to its member systems. Due to low voltage at Sand Hill during an outage of Line 29 (Hintonville to Sand Hill), a new 230/69kV substation is needed in the Southeast Greene area close to intersection of Line 231 (Benndale Sub. To McIntosh) and Line 37A (Sawmill Road to Leakesville). The addition of this substation relieves the overload of a Benndale 161/69kV, 50 MVA transformer during the outage of the adjacent transformer and removes load from the Hintonville 161/69kV, 50 MVA transformers. It also relieves the low voltage problem at Basin during the outage of Line 71 (Benndale to Basin), and the low voltage problem at Sawmill during the outage of Line 33B (Rocky Creek to Sawmill).

SMEPA also presented the need of this proposed project to the Mississippi Public Service Commission (PSC). The Commission responded with an Order Granting Certificate of Public Convenience and Necessity, dated February 21, 2006. Correspondence from the Mississippi PSC is contained in Appendix K of this EA.



## **6.0 DESCRIPTION OF ALTERNATIVES CONSIDERED**

The following alternatives were considered in determining the best way to serve the existing load demand in the Greene County area:

**6.1 No Action**– SMEPA is dedicated to providing members with a sufficient supply of power at a relatively low cost. To do this, it is necessary to maintain reasonable voltage levels on SMEPA transmission and member distribution systems. Doing nothing would dictate servicing the load area with existing facilities. Due to the low voltage at Sand Hill during the outage of Line 29 (Hintonville to Sand Hill), a new 230/69kV substation needs to be built in the Southeast Greene area close to intersection of Line 231 (Benndale Sub. To McIntosh) and Line 37A (Sawmill Road to Leakesville). The addition of this substation relieves the overload of a Benndale 161/69kV, 50 MVA transformer during the outage of the adjacent transformer and removes load from the Hintonville 161/69kV, 50 MVA transformers. It also relieves the low voltage problem at Basin during the outage of Line 71 (Benndale to Basin), and the low voltage problem at Sawmill during the outage of Line 33B (Rocky Creek to Sawmill). The request for additional facilities and the low voltage problems indicates that no action is not an acceptable alternative. Therefore, not building the transmission line, switching station and distribution substation would leave voltages inadequate for serving increasing demand in the area of the proposed action.

**6.2 Alternate Routes** - The line route is the shortest available route between SMEPA's existing 230 kV and 69 kV transmission system and the proposed

distribution substation location. Alternative routes, other than that chosen, would increase both costs and environmental impacts upon the area due to the necessity of building longer transmission lines.

**6.3 Alternate Methods of Delivery** - An alternative to construction of overhead power lines is to place them underground. In the case of this proposed transmission line, it is felt that the disadvantages of underground construction would far outweigh that of overhead construction. Underground construction costs at this voltage would be cost-prohibitive under most circumstances. In areas such as this, overhead power lines are the acceptable method of transmitting power. Also, in the case of cable failure, repair and maintenance of an underground line requires much more effort and time than that of an overhead line, thus reducing the reliability of service.

**6.4 Alternate Construction Methods** – None determined to date. Conventional land equipment will be utilized for the construction of the proposed project.

**6.5 Alternate Locations for Substation** – Other locations considered would result in greater costs due to the necessity of constructing considerably longer transmission lines as well as fail to accomplish the desired objectives.

**6.6 Construct Proposed Line and Construct Substation at Proposed Site** - After considering the various alternatives, SMEPA has elected to pursue construction of the facilities as described in the project description and as indicated in Figures 1 and 2. This site was chosen because Line 231 (230kV) and Line 37A (69kV) are both routed on this property. This eliminated the need to impact any other property owners in the area with transmission ROW when

routing the lines into and out of the substation. All of the transmission lines will be rerouted on the property that was purchased. Also, the portion of the site where the substation will be located is relatively flat, thus reducing the construction costs associated with preparing the site for construction. SMEPA considered property east of Pee Wee Road, but the 69kV transmission lines would have impacted additional property owners in order to interconnect with the intended existing lines.

## **7.0 AFFECTED ENVIRONMENT**

The proposed project is located in Greene County with the line originating at SMEPA's existing 230 kV and 69 kV transmission line and running just west and southeast of the proposed SMEPA 230:161:69 kV distribution substation site.

The topography of the site is relatively flat and uniform over the southeastern half of the site at an elevation of about 300 feet. Elevations range from 250 to 300 feet on the northwestern half, which slopes to the south, west, and north. Surface drainage is poor in the flat area and adequate in the sloped area. Local roads lie along the east, south, and southern half of the west boundaries. The northern half of the west boundary adjoins woods which are a continuation of those on site. Open fields are across the road on the southern half of the west boundary, and an open field adjoins the north boundary of the site. The existing electric lines lie along these roads. The existing 230 kV transmission line runs diagonally from southwest to northeast across the site

near the southern boundary, and the existing 69 kV transmission line runs north and south along the western boundary. The nearest river, the Chickasawhay River, is over three (3.0) miles to the west. The Chickasawhay River joins the Leaf River approximately fifteen (15) miles to the southwest to form the Pascagoula River. The Pascagoula River then runs generally south – south easterly until it empties into the Pascagoula Bay and ultimately the Gulf of Mexico.

The site is located in previously wooded areas. Most of the acreage has been clear cut, but several thin pockets of trees are present. Within these pockets, trees are too scattered to form a canopy. A few large hardwood trees are randomly scattered among the remaining immature pines. The shrub layer is dominated by yaupon, and includes gallberry, huckleberry, and vines. Broom sage and unidentified woods grasses are components of the ground cover in more open places.

Signs of wildlife are present in the area of the site. Though minimal, there is evidence of whitetail deer, raccoon, opossum, dogs or coyote, and armadillo in the area of the site. Several small bird species were noted during field reconnaissance including crow, blue bird, cardinal, mockingbird, and robin.

Existing roads provide easy access to the substation site. No properties listed in, or eligible for listing in, the National Register of Historic Places will be affected by the proposed action. The site does not border any national refuge, wildlife management area, or state park (See Figures 1 and 2).

## **8.0 ENVIRONMENTAL CONSEQUENCES & MITIGATION**

### **8.1 AIR QUALITY**

Exhaust from the engines of the machinery used to construct the proposed project may increase emissions in the proposed project area on a short-term basis. However, the components of exhaust are volatile and would probably move out of the immediate project area within a short period of time. Additionally, it is doubtful that the exhaust from such machinery would contribute to the overall budget of ozone, nitrogen oxides, aldehydes, or other noxious substances.

The dust associated with the proposed construction activity could have a small potential for affecting the air quality of the immediate project area. This source of air quality degradation, however, would not be anticipated to have any significant effect on the area. Any dust associated with construction activities would be short-term, lasting only through the construction phase of the proposed action. Additionally, vegetation would be cut from the proposed project site and the areas denuded of vegetation would be very small. As a result, the amount of air quality degradation associated with fugitive dust would be negligible, and there would be a return to ambient air quality conditions in the immediate vicinity of the proposed action impact area once the project site work is completed. No dust would be associated with the maintenance of the proposed project once the construction activities are complete.

Granular herbicides may be used on project site, but only on area of where substation “pad” will be constructed. Granular herbicides are used to

reduce potential air quality impacts as compared to aerial forms of herbicide application such as spraying. The granular form of herbicides will not become airborne like sprays. There is no plan to use pesticides on the project area.

There are no SIP requirements for proposed project in proposed area.

## **8.2 WATER QUALITY**

The proposed construction activity associated with the proposed electric transmission project will not have any direct effects on rivers or streams. The Long Branch Creek is located approximately 0.5 miles to the northwest of the proposed project site. An un-named drainage ditch containing water mostly during times of heavy rain and drainage is located approximately just under 0.25 miles directly to the west of the proposed project site. Neither of these drainages will be impacted by the proposed action. The proposed transmission lines would not span any watercourses. None of the construction equipment or vehicles would be permitted to ford any of the creeks or streams in the project area.

The proposed project could have a small potential for water quality degradation of the streams due to the erosion of soils in association with water runoff on the construction sites. Vegetation removed from the proposed site would be cut from the site, but root systems would be left intact to assist in erosion control on the very perimeter of the site. The remainder of the site will be covered in rock, as is typical for substation design. However, where grass may exist, mechanical cutting methods of site clearing associated with the proposed project could potentially increase sediment loads of the channels within the

project area. Generally, the construction and maintenance of the proposed project would not substantially increase storm flow volumes and peaks because of the use of accepted erosion control techniques such as hay bales, silt fences, and other techniques (See Figure 3). The site civil plan includes controls and mitigation for managing stormwater runoff during and after construction. The Mississippi Department of Environmental Quality (MDEQ) has reviewed the drawings and Stormwater Pollution Prevention Plan (SWPPP) associated with the proposed action. As a result, the MDEQ has issued a Construction Stormwater Permit Authorization for the proposed action. SMEPA and its contractors will comply with the required construction storm water permit(s) and storm water pollution prevention plans as applicable. The project will not substantially increase storm flow during construction because of the relatively small size of directly disturbed land (just over 6 acres).

Granular herbicides may be used on the project site, but only on the area of where substation “pad” will be constructed. Only those herbicides approved for the intended use will be employed. Other affects on the water resources of the area caused by the proposed electric substation and transmission project would not be expected given the mitigation measures that would be implemented. These water resources include area aquifers, rivers, streams, creeks, ponds, lakes, and other bodies of water.

### **8.3 WETLANDS**

The proposed project site has been evaluated by the Mobile District of the U.S. Army Corps of Engineers (USACOE). The Corps of Engineers indicated that the selected building site for the proposed facilities structures is located in an upland area and that the work methods used for transmission line construction will not result in discharges regulated under Section 404. Please refer to Section 10 of this report for the agency correspondence.

### **8.4 FLOODPLAINS**

As indicated in Section 8.3, the proposed project site has been evaluated by the USACOE and was determined to be located in an upland area and that the work methods used for transmission line construction will not result in discharges regulated under Section 404. No response was received from the Planning Division of the USACOE, but a review of Flood Hazard Boundary Map, Community Panel No. 280271A-44 indicated that the proposed project is not located in or near floodplains.

### **8.5 SOILS**

In general, soils in the area of the proposed project consist of sandy loam top soils of approximately 12 inches or less depth, and sub soils of sandy clay with depths of up to 12 feet or more.

During the construction of the proposed electric project, the soils within the proposed construction area could be affected by vehicles driven in area. This



could cause compaction and erosion of soils. The weight of vehicles on the ground causes compaction of soils. Soil compaction increases bulk density and decreases aeration porosity. This affects the soils' ability to store and supply air, water, and nutrients. Soil compaction on the proposed construction site would be minimal. To aid in mitigating soil compaction, off road travel will be kept to a minimum. The construction of the proposed new substation and transmission lines is not expected to have any significant affect on the soils of the project area. During the construction of the proposed project, SMEPA would be implementing accepted soil erosion practices (See Section 8.2 WATER QUALITY) to guard against erosion and has obtained a Construction Stormwater Permit from the MDEQ.

#### **8.5.1 Prime and Important Farmland Soils**

The proposed site of the substation and transmission lines does contain and traverse soils that are recognized as prime and statewide important farmland soils. There would be no practicable alternatives to traversing prime and important farmland soils in the project area should the proposed action be constructed because these types of soils are spread throughout the project area. A soil map and soil identification legend of the project area is provided in Appendix F. The effect of constructing the proposed project on the prime and important farmland soils would be minimal. The prime and important farmland soils would only be permanently lost to agricultural practices in the immediate vicinity of the substation pad and remainder of the fourteen (14) acre site.

The proposed project is not expected to have any cumulative effects on prime and important farmland soils due to the relatively small amount that would be taken out of production.

The Farmland Conversion Impact Rating Form AD-1006 (Appendix F), Parts I and III, was processed for the proposed project in Greene County. The form, along with the respective quadrangle and county maps, were forwarded to the Soil Conservation District Conservationist requesting the completion of parts II, IV, and V. Based on their response, Parts VI and VII were completed and show the rating of the site to be significantly below the total maximum points allowed.

## **8.6 LAND USE & RECREATION**

The proposed electric substation and transmission line project would not be expected to have any significant effect on the existing land use in project area. The land uses in the vicinity of the project are either residential or private land owner tree cultivation. There are no schools in the vicinity of the proposed project site. No industrial or commercial land use is currently taking place in the vicinity. No known industrial or commercial land use is currently being planned in the vicinity. The proposed construction site has very recently been clear cut with several thin pockets of trees present. The new transmission lines are routed in an attempt to avoid residences and residential areas.

There are five residences within half a mile of the proposed project site. To the west, a residence is approximately 1/8th mile from the site. To the

southwest, a residence is approximately 1/8th mile from the site. To the south, two residences are approximately 1/3rd mile from the site. To the north of the project site, a residence is approximately 1/8th mile from the site. There are no residences in the vicinity of the project to the east. Therefore, the construction of the proposed substation and transmission lines should not have any adverse effects on the existing land use in the area.

No developed recreational facilities, such as campgrounds or picnic areas, exist in the project impact area. Incidental hiking, deer and small game hunting could occur within the project area and could be affected by the proposed project. However, the effects of construction on such activities would take place on an incidental basis, and any effect to these types of activities by the proposed project would be minimal.

## **8.7 VEGETATION**

The proposed electric substation and transmission lines project could involve the cutting of trees. The proposed area of construction has recently been clear cut, but there are some pockets of trees remaining. The remaining species composition of the proposed project is non-merchantable timber. Prior to clear cutting, the subject property would have been classified as an oak-pine forest. The well-drained soils with their high acidity and medium to low fertility support a species association that includes loblolly and short leaf pines, blackjack oak, post oak, southern red oak, persimmon, hickory, and flowering dogwood. These trees exist only in small pockets of non-merchantable timber.

The middle layer and under story vegetation was mostly eradicated during clear cutting, but some small pockets remain. These consist principally of small trees of the canopy species, but also include red maple, winged elm, flowering dogwood, privet, sourwood, horse sugar, sassafras, water oak, and immature magnolia.

## **8.8 WILDLIFE**

In some cases, the clearing of vegetation from a proposed site may change the movement of wildlife through the area. The proposed project area has recently been clear cut with only thin pockets of non-merchantable trees remaining. For this reason, wildlife movement would be only minimally affected by the further clearing of vegetation.

The cutting blades of equipment used to clear the proposed site could injure or mortally wound small mammals, frogs, toads, snakes, and ground nesting birds. The noise produced by such equipment could have short term impacts on wildlife in very near vicinity by forcing wildlife away from immediate area. Once the noise from construction subsides or construction is completed, these animals would be expected to move back into the area surrounding the proposed project with the exception of the fenced in area of the substation.

The proposed construction project could potentially affect fish and other aquatic species living downstream from the project area, should a large amount of sediment be eroded from the construction sites and introduced into the surface water system and transported downstream. However, the proposed project is

designed to prevent this from occurring by using accepted Best Management Practices associated with construction, controls set forth in the construction Storm Water Pollution Prevention Plan, and physical controls referenced in section 8.2 of this report such as strategic deployment of hay bales, silt fences, erosion control mats, or similar erosion control techniques.

SMEPA generally addresses the avoidance of raptor electrocution by transmission lines by designing the phase-to-phase and phase-to-ground spacing to exceed the wing spans of native and migratory birds that may be passing through the areas of southern Mississippi.

## **8.9 THREATENED, ENDANGERED, AND RARE SPECIES**

Per the direction of the U.S. Fish and Wildlife Service (USFWS) Mississippi Field Office, a biological survey of the project site was conducted (See Appendix C). The USFWS directed SMEPA to ensure that the following species would not be affected: Gopher Tortoise, Eastern Indigo Snake, Black Pine Snake, Bald Eagle, Red-Cockaded Woodpecker, Louisiana Black Bear, and Louisiana Quillwort.

SMEPA employed the services of biologist Dr. William Cliburn to perform the requested survey. His report, dated February 7, 2006, concluded that “The area is too small and ecologically limited to be critical to any of the biota of interest, which are absent for various reasons, primarily involving a lack of optimal habitat and timber removal. The tortoise, snakes, and woodpecker may have occurred on parks of the site in the remote past before the destruction of

the original forest, as pine dominated woods and / or well-drained sandy loam soils would have favored these animals. The eagle and bear may have wandered across, but the site was not important to either of them. No aquatic habit for the quillwort is present and it never occurred on the site". Elsewhere in the report, Dr. Cliburn goes on to say, "an apparently active tortoise borrow is located on the exiting 69 kV line ROW, approximately 100 feet south of a line between surveyor markers PT 180 and PT 181, and near PT 104." Furthermore, Dr. Cliburn recommended: "The tortoise burrow noted above may technically be within the delineated boundaries of the site, but is outside the area which will be impacted by construction. However, because of its proximity to the construction area, it is recommended that a temporary restraining fence be placed around the burrow and that workers avoid its vicinity and are careful not to disturb it". The USFW service responded to Dr. Cliburn's report with correspondence dated February 10, 2006. The agency response stated as follows: "It is our opinion that fencing is not necessary, and could be damaging if not placed correctly. Therefore, we recommend that the flagging be maintained at the burrow, but no fencing be erected". SMEPA will follow the recommendations of the agency during construction and maintenance of the existing and proposed facilities. Correspondence associated with consultation with the USFWS is contained in the Appendix of this report (Appendix C).

## **8.10 CULTURAL RESOURCES**

The Mississippi Department of Archives and History, upon review of SMEPA's cultural resources survey dated March 27, 2006, concluded that "No sites or properties listed in or eligible for listing in the National Register of Historic Places will be affected by the construction and operation of the proposed facilities." SMEPA will follow the recommendations of the agency included in the correspondence contained in Appendix E of the report.

## **8.11 TRANSPORTATION**

With the proposed action including the construction of a microwave tower, the FAA and the FCC were included in the notification process. An FAA 2C Certification for the proposed action by the surveyor shows the coordinates of the tower. An FAA 7460-1 Application was sent and the FAA Responded with a Determination letter, dated 05/03/2006, stating the proposed tower is not a hazard to aviation (see Appendix I). An FCC Application for Antenna Structure Registration was sent May 9, 2006. The application as of 9/21/2006 is Level 2 Pending (see Appendix J). No DOT requirements are triggered by the proposed action, and no navigable waters are located near the proposal area (See Figures 1 and 2).

## **8.12 NOISE**

Noise from the proposed construction project activity associated with substation and transmission lines would have minor impacts on noise levels in the immediate project area. Machinery used to clear site and vehicles used on

site would emanate noise. There are a small number of houses within a half mile radius of site. These residences could experience increased noise levels during construction. However, these noise levels would last no longer than the duration of the construction phase and grounds landscaping phases of the proposed action. These types of noises would be typical for the area considering the amount of timber harvesting in the immediate area. The area has already experienced similar noise with the recent clear cutting of the proposed site and with the typical maintenance (bush hogging) practices used in this rural area.

#### **8.13 PUBLIC HEALTH & SAFETY**

The project area is located in a very rural locale with no potential power-frequency and electromagnetic fields (EMF) risks. The area is sparsely populated and public facilities do not exist in area. The construction crews receive specific and routine safety training, are issued hazard and job-specific safety equipment, and are subject to the oversight and disciplinary actions of supervisors, management, and construction inspectors.

#### **8.14 RADIO, TELEVISION, & CELLULAR PHONE INTERFERENCE**

The proposed substation and transmission lines should not have any effect on radio or television reception. Electronic distribution and transmission line equipment does not cause radio or television reception interference when in proper working order. SMEPA will respond to and investigate any complaints from the public of interference of this type. It is possible that cell phone use



could be affected by site. However, the impacts should be limited to very close proximity to operating equipment.

#### **8.15 SOCIOECONOMICS & ENVIRONMENTAL JUSTICE**

The proposed new substation and transmission lines project would not have any effect on the population or the economy of the area except that area power quality will be improved. The proposed new project would have no or a very minimal impact on job creation. Thus, the unemployment rate for the area would not be affected.

The proposed substation site and transmission line sites are not disproportionately located through or within a predominately minority populated area. The LandView6 Census Interactive Software 2000 Population Estimator (see appendix H) shows that the area within a half mile radius of the proposed project site, is not classified as a high minority area. The proposed project site area is not located in an area with a predominately low-income population. Because the population within the area of the proposed project is neither minority or low-income, the proposed project would not have any disproportionate effects on populations located in such areas. The proposed project also would not have any impact on, or be influenced by, the civil rights, ethnic origin, sex, or social status of people populating the proposed project area and immediate surrounding areas.

## **8.16 AESTHETICS**

The construction of the proposed substation and electric transmission lines is not anticipated to have any adverse impacts on the aesthetics of the project area. The proposed project facilities would not be visible from any recreational areas since none of these types of areas exist within the project zone. There are minimal known visually sensitive areas in the vicinity. The site is visible from residences. There are five residences within 1/3 mile of the proposed project site. To the west, a residence is approximately 1/8th mile from the site. This residence will have a view of the site. To the southwest, a residence is approximately 1/8th mile from the site. This residence will have a partially blocked view of the site since trees across the existing 69 kV ROW to the east will block some of the view. To the south, two residences are approximately 1/3rd mile from the site. These residences will not have a view of the site due to trees to their immediate north. To the north of the project site, a residence is approximately 1/8th mile from the site. This residence will have a view of the site. There are no residences to the east in the vicinity of the site. There are no vegetative buffers or topographical features that would limit the visibility of the proposed project from nearby roads.

## **8.17 COASTAL AREAS**

This proposed site is not within any coast areas or coastal zones.

## **9.0 MITIGATION**

The “U.S.D.S. - U.S.D.I. Environmental Criteria for Electric Transmission Systems,” where applicable, will be followed and any other mitigating measures as may be needed, will be implemented in the siting and construction of the site. Specifically, some of the measures that will be implemented are:

- In the event that any unrecorded archaeological sites on the project site are encountered, work will be halted and the State Preservation Officer (SHPO) will be contacted immediately before resuming work at this specific point.
- The Soil Conservation Service will be consulted on revegetation procedures, and all reasonable recommendations will be followed.
- In keeping with prior recommendations made by the Mississippi Department of Environmental Quality, best management practices and the SWPPP will be incorporated to avoid sediment runoff from the substation construction site.
- Wetlands mitigative procedures will be employed, including avoidance of wetlands where possible, use of removable wooden mats, and other Best Management Practices. Terms and conditions of Nationwide Permit Number 12 will be incorporated in the construction of the transmission line.

SMEPA’s policy is, and will continue to be, protection of the environment in compliance with applicable local, state, and federal environmental laws. Board Policy No. 302 (Appendix G) documents our objectives and policy in protecting

and complying with all local, state, and federal environmental laws and guidance documents.

## **10.0 CONCLUSION**

The proposed action will require a total of approximately fourteen (14) acres of land in Greene County for the substation, transmission lines, and microwave tower. This land will be unavailable for other uses for the life of the project.

The proposed action is necessary in order to maintain acceptable electrical voltage levels in the area of the project due to a combination of specific contingencies and general growth in the service area. The selected location and method of service results in the least impact when compared to other alternatives examined.

The proposed action is anticipated to have minimal, if any, impact on cultural resources, wetlands, threatened or endangered species habitat or other areas of special or unique environmental significance.

## **11.0 CORRESPONDANCE WITH GOVERNMENT OFFICIALS AND AGENCIES CONSULTED AND OTHER PROJECT COORDINATION**

**11.1 Planning Bodies and Government Agencies** - The Board of Supervisors of Greene County, the Southern Mississippi Planning and Development District, and the State Clearinghouse for Federal Programs were notified (Appendix A). A concluding response from the State Clearinghouse for

Federal Programs, dated April 17, 2006 (Appendix B), granted clearance for the project and confirmed that compliance with Executive Order 12372 had been sufficiently demonstrated.

**11.2 Mississippi Department of Environmental Quality** - The Mississippi Department of Environmental Quality (MDEQ) was notified of the plan for the proposed project and requested to advise of any indications of environmental constraints that must be dealt with. No response was received. However, Best Management Practices will be followed and are covered under mitigative measures. Under separate cover, a Construction Stormwater Permit was applied for and received from the agency for the purposes of mitigating the effects of stormwater runoff during and immediately following, construction of the facilities.

**11.3 U.S. Fish and Wildlife Services** - A request was made to this agency for information on endangered, threatened or proposed species that occur in the area of the proposed construction as well as any environmental restraints regarding wetlands. The USFWS directed SMEPA to ensure that the following species would not be affected: Gopher Tortoise, Eastern Indigo Snake, Black Pine Snake, Bald Eagle, Red-Cockaded Woodpecker, Louisiana Black Bear, and Louisiana Quillwort. Biologist Dr. William Cliburn conducted a survey to determine the presence/absence of the listed species and their habitat. The resulting report, dated February 7, 2006, states of the listed species, "an apparently active tortoise borrow is located on the exiting 69 kV line ROW, approximately 100 feet south of a line between surveyor markers PT 180 and PT 181, and near PT 104." He goes on to recommend, "The tortoise burrow noted

above may technically be within the delineated boundaries of the site, but is outside the area which will be impacted by construction. However, because of its proximity to the construction area, it is recommended that a temporary restraining fence be placed around the burrow and that workers avoid its vicinity and are careful not to disturb it". The USFWS responded to Dr. Cliburn's report with correspondence dated February 10, 2006. They stated, "It is our opinion that fencing is not necessary, and could be damaging if not placed correctly. Therefore, we recommend that the flagging be maintained at the burrow, but no fencing be erected". The correspondence associated with consultation with this agency is found in the Appendix of this report (Appendix C).

**11.4 U.S. Army Corps of Engineers** - The U.S. Army Corps of Engineers was contacted by letter requesting advice concerning environmental constraints affecting floodplains due to proposed construction of the transmission line and switching station projects. The Regulatory Branch of the Mobile District Corps of Engineers' response, dated January 23, 2006 (Appendix D) determined that a Department of the Army permit pursuant to Section 404 of the Clean Water Act will not be required for the work proposed. It was also determined that the selected building sites for the proposed structures are located uplands; the work methods used for transmission line construction will not result in discharges regulated under Section 404.

The Planning Division was contacted regarding floodplain determination for the project. SMEPA did not receive any indication from the Corp that any portion of the project area would be located in any floodplain. No response was

received from this agency during the 45-day period following notification despite attempts at follow-up via phone messages. A review of the Flood Hazard Boundary Map, Community Panel No. 280271A-44 indicated that the project is not located directly in or immediately adjacent to 100-year floodplains.

**11.5 Mississippi Department of Archives and History** - A request was made to this agency for a Cultural Resource Assessment in the area of the proposed project site. Their initial response, dated January 9, 2006 (Appendix E), recommended that a cultural resource survey be conducted on the project area. Accordingly, SMEPA contracted the services of Jim Lauro of Archaeology Mississippi, Inc. to perform the survey. Lauro's report cited that the project would not affect properties listed in or eligible for listing in the National Register of Historic Places. Upon receipt and review of the report, the Mississippi Department of Archives & History concurred, with their letter dated April 10, 2006. See Appendix E for all further correspondence and study.

**11.6 Natural Resources Conservation Service** - A Farmland Conversion Impact Rating Form AD-1006 (Appendix F), Parts I and III, was processed for the proposed project in Greene County, and along with the respective maps, forwarded to the Soil Conservation District Conservationist requesting the completion of parts II, IV, and V. Based on this response, Parts II, VI and VII were completed and show the rating of the site to be significantly below the total maximum points allowed.

**11.7 Federal Aviation Administration** – An FAA 2C Certification for the proposed action by the surveyor shows the coordinates of the tower. An FAA

7460-1 Application was sent and the FAA Responded with a Determination letter, dated 05/03/2006, stating the proposed tower is not a hazard to aviation. See Appendix I.

**11.8 Federal Communications Commission** - An FCC Application for Antenna Structure Registration was sent May 9, 2006. The application as of 9/21/2006 is Level 2 Pending. Please see Appendix J for all associated notifications and documentation.

## **12.0 NEWSPAPER ADVERTISEMENT AND LEGAL NOTICES**

The proposed project does not require that a public scoping meeting be held. The notice of availability of the EA will be placed in the Federal Register and local newspaper consistent with the RUS regulations 7 CFR 1794.42.